

Amendments to the Claims

In the Claims

This listing of claims will replace all prior versions, and listings, of claims.

Listing of Claims

1. (Currently Amended) An auto stereoscopic display apparatus comprising:

a spatial light modulator comprising an array of pixels arranged in rows and columns in a pixel plane, the pixels comprising pixel apertures having gaps therebetween with the gaps between the columns of pixels extending substantially parallel to the columns of pixels; and

a spatially multiplexing parallax element capable of directing light from successive columns of pixels towards successive ones of two or more viewing windows in a nominal window plane,

wherein the pixel apertures are arranged to repeat at a pitch substantially equal to a representative width of an intensity profile of an image of an an nominal-human observer's pupil in the nominal window plane formed in the pixel plane by the spatially multiplexing parallax element, and said representative width is the width between the 5% and 95% cumulative integration points of said intensity profile so that a convolution across two adjacent columns in a direction perpendicular to the columns varies by at most 5% of the maximum of the convolution,

wherein the convolution is :

(a) the intensity profile of the image of the ~~nominal-human~~ observer's pupil in the nominal window plane formed in the pixel plane by the spatially multiplexing parallax element, and

(b) the total height of the pixel apertures parallel to the columns of pixels.

2. (Cancelled)

3. (Original) A display apparatus according to claim 1, wherein the pixel apertures of pixels of each colour have substantially the same, constant total height parallel to the columns of pixels.

4. (Original) A display apparatus according to claim 3, wherein the pixel apertures of pixels of different colours have substantially the same total height parallel to the columns of pixels.

5. (Original) A display apparatus according to claim 1, wherein the pixel apertures of pixels of each colour have substantially the same width perpendicular to the columns.

6. (Original) A display apparatus according to claim 5, wherein the pixel apertures of pixels of different colours have substantially the same width.

7. (Original) A display apparatus according to claim 5, wherein the pixel apertures of pixels of different colours have different widths to compensate for chromatic aberration.

8. (Original) A display apparatus according to claim 1, wherein along the rows of pixels, the pixels are arranged in groups consisting of a plurality of adjacent pixels of the same colour.

9. (Original) A display apparatus according to claim 8, wherein the pixels of each group are commonly addressable.

10. (Cancelled)

11. (Original) A display apparatus according to claim 1, wherein the total height of the pixel apertures parallel to the columns of pixels varies.

12. (Currently Amended) A display apparatus according to claim 11, wherein the total height of the pixel apertures parallel to the columns of pixels has a profile which increases towards the opposite edges of the same pixel aperture relative to the centre of the pixel aperture.

13. (Original) A display apparatus according to claim 12, wherein the total height of the pixel apertures parallel to the columns of pixels has a profile which has a flat central portion.

14. (Original) A display apparatus according to claim 11, wherein a representative width of said intensity profile is at most 75% of the pitch of the columns.

15. (Original) A display apparatus according to claim 14, wherein said representative width is the width between the 5% and 95% cumulative integration points of said intensity profile.

16. (Currently Amended) An autostereoscopic display apparatus comprising: a spatial light modulator comprising an array of pixels arranged in rows and columns in a pixel plane, the pixels comprising pixel apertures having gaps therebetween with the gaps between the columns of pixels extending substantially parallel to the columns of pixels; and a spatially multiplexing parallax element capable of directing light from successive columns of pixels towards successive ones of two or more viewing windows in a nominal window plane,

wherein the pixel apertures repeat at a pitch equal to a representative width of an intensity profile of an image of an nominal human observer's pupil in the nominal window plane formed in the pixel plane by the spatially multiplexing parallax element, and said representative width is the width between the 5% and 95% cumulative integration points of said intensity profile.

17. (Original) A display apparatus according to claim 16, wherein the pixel apertures of pixels of each colour have substantially the same, constant total height parallel to the columns of pixels.

18. (Original) A display apparatus according to claim 17, wherein the pixel apertures of pixels of different colours have substantially the same total height parallel to the columns of pixels.

19. (Original) A display apparatus according to claim 16, wherein the pixel apertures of pixels of each colour have substantially the same width perpendicular to the columns.

20. (Original) A display apparatus according to claim 19, wherein the pixel apertures of pixels of different colours have substantially the same width.

21. (Original) A display apparatus according to claim 19, wherein the pixel apertures of pixels of different colours have different widths to compensate for chromatic aberration.

22. (Original) A display apparatus according to claim 16, wherein along the rows of pixels, the pixels are arranged in groups consisting of a plurality of adjacent pixels of the same colour.

23. (Original) A display apparatus according to claim 22, wherein the pixels of each group are commonly addressable.

24. (Cancelled)

25. (Currently Amended) An autostereoscopic display apparatus comprising:
a spatial light modulator comprising an array of pixels arranged in rows and columns in a pixel plane, the pixels comprising pixel apertures having gaps

therebetween with the gaps between the columns of pixels extending substantially parallel to the columns of pixels; and

a spatially multiplexing parallax element capable of directing light from successive columns of pixels towards successive ones of two or more viewing windows in a nominal window plane,

wherein the total height of the pixel apertures parallel to the columns of pixels varies, and has a profile which increases towards the opposite edges of the same pixel aperture relative to the centre of the pixel aperture on one side, wherein the opposite edges of the pixel aperture are opposite in a direction substantially perpendicular to the columnar direction of the pixels.

26. (Cancelled)

27. (Original) A display apparatus according to claim 26, wherein the total height of the pixel apertures parallel to the columns of pixels has a profile which has a flat central portion.

28. (Currently Amended) A display apparatus according to claim 25, wherein a representative width of the intensity profile of an image of ~~an nominal human~~ observer's pupil in the nominal window plane formed in the pixel plane by the spatially multiplexing parallax element is at most 75% of the pitch of the columns.

29. (Original) A display apparatus according to claim 28, wherein said representative width is the width between the 5% and 95% cumulative integration points of said intensity profile.

30. (Original) A display apparatus according to claim 1, wherein the rows and columns are perpendicular to each other.

31. (Original) A display apparatus according to claim 1, wherein the display apparatus is switchable between a first mode in which the spatially multiplexing parallax element is effective to direct light from successive columns of pixels towards an alternate one of two viewing windows and a second mode in which the spatially multiplexing parallax element has no effect.

32. (Original) A display apparatus according to claim 1, wherein the spatially multiplexing parallax element has a structure which is uniform in a direction parallel to the columns of pixels and which repeats in a direction parallel to the rows of pixels.

33. (Original) A display apparatus according to claim 1, wherein the spatially multiplexing parallax element is a lenticular array.

34. (Original) A display apparatus according to claim 1, wherein the spatially multiplexing parallax element has a structure which repeats at a pitch which is substantially an integer multiple of the pitch of the columns of the array of pixels.

35. (Original) A display apparatus according to claim 1, wherein a pitch of the windows in the nominal window plane is less than 55 mm.